

UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 1 of 2

PATENT NO. : 7,555,079 B2

APPLICATION NO. : 10/534,923

ISSUE DATE : June 30, 2009

INVENTOR(S) : He

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On the Face Page, in Field (56), under "FOREIGN PATENT DOCUMENTS", in Column 2, Line 1, delete "DE 19606102 8/1997".

In Column 8, Line 2, delete "roation" and insert - - rotation - -, therefor.

In Column 11, Line 4, delete " $\epsilon^2(p,m)=\alpha^m(|r|^2-16|h_{p,m}|^2)$, $\epsilon^2>0$., and insert - - $\epsilon^2(p,m)=\alpha^m(|r|^2-16|h_{p,m}|^2)$, $\epsilon^2>0$. - -, therefor.

In Column 11, Line 38, delete " $a \in [0.8, 0.9]$ " and insert - - $a \in [0.8, 0.9]$ - -, therefor.

In Column 11, Line 40, after "preferably the" insert - - parameters a and b are selected according to the time scale of the variation in the delay spread.

The aperture of the equalizer span optimization is then determined as:

$$m_l = \text{round}(m_s(t-1)) - A, m_l \geq m_{\min}$$

$$m_u = \text{round}(m_s(t-1)) + B, m_{\max} \geq m_u,$$

i.e. m_l and m_u are lower and upper bounds, respectively, of an interval around m_s . The

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constants A and B determine the width of the aperture. For example, $A=B=1$ yields an aperture that is 2-3 taps wide.

The constant upper and lower limits m_{\max} and m_{\min} ensure that m_l and m_u lie within desired limits, e.g. $m_{\min} = 4$ corresponding to typical urban (TU), and $m_{\max} = 8$ corresponding to hilly terrain (HT).

This embodiment has the advantage that no assumption has to be made about the precise channel delay spread, thereby improving the performance of the synchronization and the subsequent equalization.

It is a further advantage of this embodiment that the channel estimate provided by this synchronization method is robust against DC offsets, thereby providing a good input for the DC offset estimation.

It is noted that in connection with an EDGE receiver, it is preferred to combine the receiver filter with a noise whitening filter in order to suppress interferences and, thus, to avoid the necessity of a narrow receiver filter.

The invention has primarily been described in connection with GSM/EDGE training symbols. However, the invention is not limited to GSM/EDGE, but may be applied to signal bursts of other communications schemes which utilize suitable training sequences for burst synchronization. - -

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